A new environmental

CAP

CONSERVATION — ACTION — PROGRESS

Québec

A new environmental

GAP

strategy

Québec

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TABLE OF CONTENTS

Introduction 5

An unavoidable choice 9

A change in strategy 11

Moving from treating isolated problems to recognizing the interdependence of natural elements 11

From local concern to worldwide interdependence 13

From pollution control to resource conservation 14

Conservation as the basis of lasting development or a new social contract between the environment and progress 16

A universal appeal 17

Changing our ways 19

A new course of action for the ministère de l'Environnement 19

Simple guidelines and renewed strategies 23

Sustained cooperation from other departments 25

Increased efforts 27

Initial objectives by sector 31

Introduction

*«**CAP** - **A New Environmental Strategy**» is a policy statement submitted for your appraisal by the Québec ministère de l'Environnement. It reflects the Department's desire to seek solutions to problems plaguing the environment through new proposals, incentives and actions.*

Ours is a relatively young department, established in recent years to meet the growing demand for action by citizens who had suddenly become aware of the considerable harm to their way of life resulting from systematic attacks on the environment. Immediate action was called for, at times under emergency conditions. So diverse and complex were the problems faced on all fronts, that given the limited resources available at the time, the Department had to set priorities, being able to concentrate only on the most crucial and urgent issues. Initial efforts were naturally focused on restoring and repairing certain sectors of the environment, concentrating on obvious priorities: water purification and clean-air programs, identification of hazardous-waste sites, and monitoring of drinking-water quality, to mention but a few. Striking achievements have been made over the last fifteen years. The adoption of our Environment Quality Act, officially recognized in international circles as a model of its kind, represents a major achievement in itself.

On being appointed Minister of the Environment, I decided that the time had come to steer Québec's environment towards new horizons and new challenges. We had been so busy over the years repairing and restoring, that we had never paused to consider a more comprehensive, global approach. We were working within a context favouring the short term over the long term. The time has come to take that crucial step towards long-term action.

Although the work of restoring environmental damage is far from being completed, we will never succeed unless we change course. If we do not alter our behaviour and attitudes where the environment is concerned, we will repair and restore ad nauseam. Indeed, unless the mentality of polluter or aggressor evolves into one of preventor or conserver, we will be forced to tackle the same problems over and over again, be it after correcting a defect, restoring a lake or reworking a site. The only way to escape having to ceaselessly repair our environment, is to learn to preserve it by avoiding the constant abuse and deterioration which have endangered it over the decades. Safeguarding our environment is tantamount to protecting and enhancing our quality of life.

This document is an attempt to steer a new course towards our environmental future. Far from seeking to suggest or impose immediate solutions to all possible problems, it outlines the main avenues of the Department's thinking and actions to be taken over the coming years. On the basis of these guidelines, we intend to define specific sector-based policies in keeping with our key objectives and principles.

*«CAP - **A New Environmental Strategy**» is the product of two years of reflection within the ministère de l'Environnement. I have often committed myself publicly to steering the Department towards conservation as a central goal. The policy document which we now propose is tangible evidence of this commitment.*

This policy is, above all, a proposal and not a decree. We hope it will be read, pondered and appraised — and give rise to numerous comments and suggestions. We have already received the comments of our Advisory Council for the Environment. I intend to visit the various regions of Québec to introduce the «CAP» to you, and welcome your thoughts and ideas. The environment belongs to all of us, and is thus a concern for each of us. It is therefore essential that Québec's environmental policy be the expression of our common will and of a broad consensus.

I would like to take this opportunity, as I introduce this policy on a new environmental strategy of conservation, to stress the symbolic and real importance of our newly created Conservation Division. Within it, we have integrated the two units most involved to date in conservation work: Lakes and Watercourses Management and Ecological Heritage. However, as you will note as you read this document, all of our operational sectors combine to form a broad, overall conservation-geared strategy.

Our course is firmly set towards prevention and conservation. Both its momentum and direction are irreversible. Together we are headed towards those new horizons where the environment must become a focal part of each and every decision likely to affect our way of life, present and future.

Clifford Lincoln
Minister of the Environment

« We have not inherited the earth from our parents;
we have borrowed it from our children. »

World Conservation Strategy

An unavoidable choice

From time immemorial, the human race has had to struggle to survive, to come to terms and grapple with the forces of nature. It had to confront other species and overcome many disasters and plagues. As a result, the balance of large populations was often jeopardized. However, humankind has a wonderful, surprising ability to adapt. Man reacted and began to develop patterns of behaviour adapted to the external constraints of his environment. And later, through extraordinary technological progress, man was able to free himself from these external constraints.

Today, the human race is faced with problems created by its own behaviour and actions. Economic activity and technology are being developed more intensely and artificial chemical products are on the rise. Our natural resources are being over-exploited, while our non-renewable resources are being decimated and our population is growing. Consequently, we are witnessing a deterioration in the environment. Resources essential to the survival and welfare of the human race are gradually disappearing, a trend which has accelerated at a frightening rate during this century. For the first time in its young history, *humankind is faced with a survival problem which is not entirely related to other species or to the forces of nature, but results from its own harmful treatment of the environment, its lifeline.*

This entirely new approach is arousing increasing interest and concern. We have witnessed a noticeable increase in public awareness in the past decade, corroborated by public opinion polls in Québec and abroad. The vitality of environmental groups is also tangible evidence of this trend.

In its recent report, the World Commission on the Environment and Development stressed the immediate need for action and for viewing economic progress in light of a new social and environmental outlook.

More and more, societies called upon to make political and economic decisions must take environmental protection into account along with the protection of the interactions which ensure the maintenance and the survival of ecosystems throughout the world. Preserving the quality and precarious balance of the earth's ecosystems is not only an alternative, but an *unavoidable, basic choice*, associated with and inherent in any decision concerning development. *The quality of the environment must be an ever present concern and the object of constant vigilance on the part of all those involved in development.*

This new reality confirms the necessity, at the international, regional and local levels, of a change of course and a new outlook on the future. In the short term, it means changing our attitude and adopting new means of action.

A change in strategy

In light of this new awareness, we must take stock of the situation and propose courses to be followed. Where do we stand in relation to the environment, and where do we go from here? The environmental sea is stormy. Seldom a day or a week goes by that we are not greeted by a flood of alarming news: major ecological disasters such as those of Tchernobyl, Bhopal or Basel, in countries with very different economic systems; more current ecological accidents such as oil spills in waterways, local pollution problems, and such general phenomena as our dwindling forests, phenomena which are alarming because they are unmastered and barely understood. Nevertheless, significant and often adequate measures are being taken to deal with these problems, although they are not always evident. Some business firms are investing in the environment, and the Québec Government is devoting $6 billion to improve urban living conditions. Nevertheless, the question remains: will the measures taken eventually match the pace at which the environment is being destroyed?

In order to grasp the extent of the changes occurring, it is important to fully understand the trends affecting the environment and relate them to the environmental measures being taken. Here are some of them.

Moving from treating isolated problems to recognizing the interdependence of natural elements

First-generation environmental intervention was centred on isolated, highly visible sources of pollution. These actions consisted in reducing the volume and density of smoke from smokestacks, treating wastewater from industrial effluents or municipal sewer systems, reducing the noise from quarries, monitoring garbage dumps, and so on. Government intervention and programs related to each of these isolated problems were successful to some degree. These first-generation measures must be continued and refined. Québec's wastewater treatment program must be completed. All industrial plants must carry out appropriate pre-treatment or primary treatment designed to eliminate traditional pollutants (particles in suspension, biological demand for oxygen, etc.).

Further steps are required, however, as the nature of this pollution is changing. It is becoming more diffuse, less visible and, therefore, more insidious. Scientific and technological progress has made it possible to discover and measure the action of pollutants which were formerly hidden behind more visible types of pollution.

We are becoming increasingly aware of the significance and range of diffuse pollutants, and of the difficulties in controlling them. We know, for instance, that proper manure spreading is beneficial for farm crops, but that if spreading is carried out at the wrong time or in excessive concentrations, it may affect the quality of watercourses. While this problem may seem minor for one farm alone, the accumulation of excessive spreading along a watercourse results in the marked deterioration of downstream water, particularly where cattle raising is concentrated. We are also becoming aware of the polluting effect of urban runoff or the overflow of dirty snow. Increasing numbers of individuals are reacting to the poor quality of the air in some buildings. Here again, pollution is less evident for a number of reasons: the materials used, ventilation system design,

or improper system operation. In short, pollution is becoming more difficult to identify.

Pollution is becoming less obvious. While it can be detected and diagnosed easily in the case of acrid smoke, putrid odors or cesspool effluents, many toxic substances which poison our existence are not so readily perceived. Their detection requires highly sophisticated equipment. Such is the case of polycyclic aromatized hydrocarbons (PAH), some of which are cancerogenic in infinitesimal doses. These substances are measured in nanograms, a unit of measurement so small that it corresponds to one second in 32 years, to four centimetres on a wire extending around the earth, or to one millilitre (onehalf gram) in the Atwater drinking water reservoir of the City of Montréal. The infinitesimal is beginning to upset our lives. We must acquire the means necessary to study this infinitesimal reality to be able to measure it and improve our ability to interpret it, so that we can assess and establish the relative dangers represented by these substances.

As we become aware of the changing nature of pollution, we must also become conscious of the interrelationship between the problems it engenders. We must face and solve a series of problems as a whole, rather than grapple with single isolated issues. This interdependence deserves a closer look.

(a) Interdependence of pollutants

It is not enough to consider the specific effects of one particular pollutant alone. The combined effects of many contaminating substances found simultaneously in a given milieu must be analyzed. Often, where the environment is concerned, everything is a matter of equilibrium. For example, while CO2 is essential to the quality of the air, it may be harmful in concentrated form. Little is known about the points at which this equilibrium is upset. As combined effects may be felt in the case of toxic substances, new ways to test pollution must be devised. Ecotoxicological tests must be developed to assess physical and chemical parameters, that is, tests designed to measure the combined effect of substances in a given environment on various life forms — for instance, on daphne or trout in an aquatic milieu.

(b) Interdependence of pollution control methods

Generating a new source of pollution while fighting a specific pollutant is a process of doubtful efficiency. Nevertheless, this is often the case, particularly where industrial pollution is concerned. Scrubbers are used to clean gas from smokestacks, for instance, but while an effort is made to clean the water coming out, sludge containing the same pollutants or other contaminants is formed. As a result, the pollutants are transferred from air to water, and then to the soil if the sludge is buried in a landfill site, or the air, if it is not properly incinerated.

(c) Interdependence of various pollution vectors

To assess the effect of various contaminants, we must take into account their simultaneous presence in the water, the air and the soil. When evaluating the health hazards caused by certain pollutants, overall exposure must be considered, regardless of whether these agents reach us through the air by breathing, through water by drinking or through soil and the food

chain by eating. Specialists call this the multimedia approach, and it is based on the simple observation that there are many ways of being exposed to toxic substances.

(d) Interdependence between generations

We have suddenly become aware of the interdependence between generations on this planet through the discovery of sites where dangerous industrial wastes had been buried.

In the old LaSalle dump, for instance, industrial wastes left by previous generations, often through ignorance, had to be cleaned at great cost. Hundreds of similar dump sites exist in Québec. Our generation cannot plead ignorance, however, because we know now that if we are not careful we may spoil many sites for our children and their children's children.

In short, the interdependence of various pollutants is a very complex and little-known phenomenon. Yet it is of crucial importance for dealing with environmental issues.

From local concern to worldwide interdependence

Environmental problems are more widespread than ever before.

There are still some local problems which are destined to remain local given their character. Odours fade as we move away from the source; isolated noises remain local in nature. A number of pollutants are purely local, and still need to be dealt with locally. On the other hand, there are local problems of a more general nature originating from a multitude of local regional or very remote sources. A striking example of this is the dieback of Québec's maple trees. Among the possible causes, researchers have mentioned long-range atmospheric pollutants such as sulfur dioxide, nitrogen oxide, and the resulting secondary pollutants. Consequently, the quality of air over our maple stands is not only affected by sulfur dioxide sources in Québec, but also by those of Ontario and of the thermal power plants in some American states.

Local environments may be affected by pollutants creating disturbances on a regional or even a continental scale. The Lac Saint-Pierre plain, which is prone to flooding, harbours a host of migratory birds. Should such sensitive ecological zones be significantly disturbed, the use of this wildlife resource could be affected throughout North America. Because of this spatial interdependence, we are both victims and culprits, the polluting and the polluted. We must remember this when assessing our actions and reactions.

We must also pay attention to similar, common problems shared with other industrialized states: industrial pollution, pollution from automobiles, waste management, and so on. We all stand to benefit by sharing our experience in dealing with similar problems.

We also encounter common problems due to the interdependence mentioned above. In such cases, problem solving calls for decisive government action. Québec cannot act alone, it must join with its neighbours. With this in mind, the ministère de l'Environnement set up an Intergovernmental

Relations Division last year. In this same vein, the Department works very closely with the Canadian Council of Resource and Environment Ministers.

Other threats to environmental balance exist in other parts of the world: depletion of fauna and flora; desertification; death of tropical forests. Although remote, these phenomena will eventually affect us and may contribute to geopolitical imbalances and North-South tensions.

From pollution control to resource conservation

Although pollution control is certainly a priority, it must not be considered an end in itself. It is but a means to achieving the more general objective of *resource conservation*. Conservation is first and foremost a matter of *prevention*.

— Natural resources are threatened by pollution (the presence of contaminants in the environment) resulting from human activity. The relationship between the quality of the air and the yield of forests and various farming operations, for example, the effect of ozone on corn growing, is now fairly well understood. To preserve and develop our resources we must fight pollution. But how, and to what extent?

• To what extent must we practice pollution control? Simply targeting the total elimination of pollution is not the answer; we must know the effects of this pollution. Human health, the soundness of ecosystems and the sustained utilization of resources provide us with criteria. This already applies to Québec's wastewater treatment program, aimed specifically at recovering waste along some river sections, and is increasingly true in the case of toxic pollution, where bioaccumulation becomes the most significant criterion.

• How should pollution control be carried out? Until now, it consisted in treating the effluents of smokestacks and residential sewers. While pollutants were generated, an attempt was made to treat them. This approach is often costly and creates the additional hazard of shifting pollutants from one medium to another. From now on, efforts should focus on the use of clean technologies, that is, on manufacturing processes reducing the creation of pollutants, and on recovery and recycling of secondary materials.

While reducing pollution, clean technologies also minimize the consumption of resources and make their recovery easier. In terms of conservation, clean technologies are twice as efficient, because they promote recovery, recycling and sustained utilization. The fact that municipalities are increasingly concerned with recovering and recycling secondary matter is encouraging. Many industrial establishments have also shown an interest in this approach. The Oka cheese dairy is a good example of the application of clean technology. In the veneer industry, the development of the thermonic process is also very promising.

In addition to modifying our approach to industrial concerns, synthetic chemical substances must be eliminated. Control mechanisms must be set up for all phases of the life cycle of these products: from their development, production, marketing and use, to their disposal.

However, pollution is but one source of resource disturbance. Management methods themselves

affect resource renewal or development. Excessive harvesting is sure to reduce wildlife populations. Forestry operations on too large a scale, without appropriate reforestation or regeneration, will deplete our forests. The same crop grown repeatedly on certain soils will reduce their capacity to produce. In order to achieve our overall environmental objectives, therefore, decontamination alone does not suffice. We must change, adapt and improve our methods for using our natural resources, be they the forest, farmland or water.

• Such changes must be adapted to the characteristics, function and interdependence inherent in each environment. Woodlands are useful in farming operations, both for the farmer and the quality of the environment. They shelter a great number of pollen-carrying insects, act as a screen against wind erosion, and provide a home for insect-eating birds.

Various environments, or ecosystems, are highly interdependent. Excessive deforestation along a drainage area will affect the river system, and may result in flooding, erosion, and silting up of ponds and spawning grounds which are essential to fish life. This ecosystem interdependence must be highlighted and taken into account. On it rests our future well-being.

— To this end, it is important to develop an understanding of and get a clear grasp on today's ecological realities. In Québec, knowledge concerning our ecosystems, which are defined as «parts of the territory with certain characteristics requiring specific management designed to ensure the lasting productivity and permanence of their resources» is still in an embryonic state. Nevertheless, the Department is well advanced in its ecological mapping of the province's territory. In this respect, it plays a leading role in Canada, and its studies and reports are used as reference material. We have a sound knowledge of Northern Québec (the North Shore and James Bay) and of the Northwest. This is not the case for Southern Québec, however, except for sites with a very high ecological and wildlife potential. These sites are very precious as far as conservation is concerned. However, conservation must apply to all areas whose resources are used.

• Resource conservation is a creative activity. All too often, it has been dealt with as a restrictive measure (parts of the territory placed under reserve), and considered an impediment to progress and development. Conservation is not limited to placing areas under reserve ; it concerns all lands and all fields of endeavour. Rather than an obstacle, it is a guarantee of continued, long-lasting resource development. Recent policy statements handed down by the Minister of Agriculture, Fisheries and Food regarding soil conservation and the new «sustained yield» forestry policy set out by the Minister of Forests, should be perceived as promising changes in the resource conservation process.

• Through pollution control measures and the adoption of preventive behaviour, this resource conservation will improve the quality of life in various environments, or will at least halt its deterioration. Environmental quality must no longer be judged solely in relation to its feeding capacity (air, water and soil quality). It also depends more concretely on environmentally harmful effects with which citizens are faced (atmospheric fallout, odours, noise), and on the beauty of their surroundings.

This new view of environmental quality spawns a new type of relationship between human endeavours, the use of space and respect for the natural environment. Within this outlook, the quality of various milieus is conditioned mainly by integrating the natural environment into town planning and land-use planning policies. New planning practices introduced by Québec's Act respecting land use planning and development made regional county municipalities and local municipalities aware of these new problems. The quality of human environments and conservation of ecosystems have become part of an overall concern.

Conservation as the basis of lasting development or a new social contract between the environment and progress

The central role of conservation in environment-related actions has already been stressed by many international organizations including the International Union for Conservation of Nature and Natural Resources, through its World Conservation Strategy; the Organization for Economic Cooperation and Development, during its symposium on the economy and the environment; and, quite recently, the World Commission on the Environment and Development, in its report. The message passed on by these various agencies is the same and is repeated with increasing urgency: societies and governments must reach a new agreement between environmental quality and progress. In order to grasp the nature and scope of this new contract, it may be useful to give a rough sketch of the change in relationships between development and the environment.

At first, the environment was of little concern and was considered only in certain acute health and public hygiene and pollution problems. ***The environment was often considered a large garbage can,*** with a more or less unlimited capacity. Its value was considered negligible.

Later, environmental awareness was sparked with the fight against pollutants. The closing of beaches, the depletion of fish in rivers and streams, odours and smoke from factory smokestacks called for at least minimal pollution control measures. Environmental protection was considered an obstacle to progress because of the cost involved in pollution control. Investments devoted to it were considered unproductive, and the social cost too high. The possibility of plant shutdowns and the increased unemployment and inflation caused by pollution control were sources of concern. It was feared that municipal taxes would increase significantly with the creation of wastewater treatment plants and the closing of dump sites. There was a tendency to isolate or compartmentalize development, the estimated costs of which were passed on to other sectors and neglected. Even today, there is a certain reluctance to spend money on fighting pollution. Fortunately, this reticence is gradually giving way to the promotion of environmental protection and conservational measures.

The concept of ***the environment as a necessary constraint*** is currently predominant. Public opinion is in favour of vigorously applied environmental standards and of restrictions and processes used in various activities. These restrictions are considered essential for the preservation of public health and welfare.

The costs of these measures must be considered in light of a new awareness and an appraisal of the ensuing economic benefits. There is concern for the extent of damage done to the environment in relation to health, productivity of natural resources, recreation, and so forth. Furthermore, pollution-control projects create tangible economic spinoffs. For instance, approximately 10 000 jobs are now being created in Québec each year through the construction of wastewater treatment plants. The recovery and recycling sectors are another example of job creation combined with resource and energy conservation.

Environmental protection as a natural ally is a new phase that must be vigorously embarked upon. Inasmuch as conservation is truly perceived as a prerequisite for lasting development, protection of the environment will become a natural reaction at the macroeconomic and microeconomic levels, for governments, businesses and citizens. The MacDonald Commission's report on the economic union and the prospects for development in Canada stressed the need for vigorous government action in environmental matters.

Environmental protection as a natural ally is a new phase that must be vigorously embarked upon. Inasmuch as conservation is truly perceived as a prerequisite for lasting development, protection of the environment will become a natural reaction at the macroeconomic and microeconomic levels, for governments, businesses and citizens. The MacDonald Commission report on the economic union and the prospects for development in Canada stressed the need for vigorous government action in environmental matters.

At the macroeconomic level, such action involves the longterm vitality of major sectors in Québec, such as forestry, agriculture and tourism. At the microeconomic level, it raises the question of the competitiveness of our business sector. While investing in environmental protection, industries often innovate, and optimize their production processes. They sometimes change or reduce the amount of raw materials used, modify their energy sources, reduce their water consumption and recover or recycle by-products. In some cases, they also adjust or modify their manufacturing processes. The modernization of Québec's pulp and paper sector resulted in reduced water pollution, and at the same time decreased energy consumption and better utilization of forestry resources, thus increasing the industry's competitiveness.

There are further examples of industries whose productivity was bolstered when they were compelled to meet stricter environmental standards. The environment becomes a natural ally within an alliance that commands respect and offers advantages.

From this perspective, we must find the means to implement, within the various sectors of activity, the general guidelines set out in the World Conservation Strategy and in the recent report of the World Commission on the Environment and Development.

A universal appeal

In practice, where concrete measures are concerned, the major trends already discussed are changing roles and attitudes. When the ministère de l'Environnement had to deal with isolated cases of pollution, it could easily solve the problems

through adequate legislation and appropriate action.

Now, we are facing largely interdependent phenomena, and we must concentrate not only on pollution control but on changing our methods of tapping resources. Consequently, the roles of the Department and of the other groups involved is changing.

It is incumbent upon the ministère de l'Environnement to establish general policies, delve deeper into the knowledge and understanding of new phenomena related to pollution control and the ecological framework within which various milieus are used, and improve on existing means of action. However, we all have a significant contribution to make to implement these trends. This contribution must come from other departments, from citizens in their day-to-day living, from industries in their choice of raw materials, in their production and operating methods, and from municipalities, which have a role to play in many environmental sectors (water, domestic waste, land development).

While stepping up its restrictive measures, the ministère de l'Environnement must be convincing and persuasive. But, the responsibility for positive action rests with each and every one of us. We are all jointly and individually trustees of the environment and our resources. We must discard our «ownership» attitude whereby we feel we can make use of the environment as we see fit and realize that we are trustees for future generations.

Changing our ways

A new course involves a change in ways and attitudes. It would be unrealistic at this stage to try to define all new behaviour patterns required. The purpose of this document is much more modest. It advocates taking one step at a time until we «learn how to walk». We must take the first steps in this new direction in order to better define the proper approaches to conservation. To this end, we will begin by discussing the initial steps taken by the ministère de l'Environnement.

A new course of action for the ministère de l'Environnement

Since its creation, the Department has often found itself somewhat isolated in carrying out its legally conferred mandate, which consists in preparing environmental policies, gathering knowledge on the condition of habitats, preventing environmental deterioration, ensuring environmental rehabilitation and restoration, seeing to the preservation of our ecological heritage, and establishing public watermanagement policies and processes.

The ministère de l'Environnement had its job cut out for it. Within a very short period of time, it had to define and develop its own approach, and get a hold on current environmental problems. Most importantly, it had to set up restoration programs designed to correct past errors, while confronting all manner of environmental emergencies.

The far-reaching wastewater treatment program is designed to rehabilitate and restabilize Québec's water resources by coming to grips with urban, industrial and agricultural sources of pollution. Among the major corrective programs are the restoration of hazardous waste sites and the elimination of the main sources of air pollution. All these have had to be addressed as top priorities.

Now that it has made significant progress in organizing its internal structure and establishing research programs, as well as tackling the most pressing environmental problems, the ministère de l'Environnement is in a better position to coordinate the strategies required for setting a new course where environmental conservation is concerned. The Department is better equipped to promote positive answers in favour of the environment. Each and every one of us is encouraged to support, step up and promote all of the dynamic environmental forces which have developed and grown in Québec over the past few years.

This will not be an easy battle, considering the increased, numerous, constant joint efforts required by a great variety of participants involved in these issues. It will be even tougher given that all members of society are being called upon to drastically change their everyday habits and to adopt an unflinching attitude of respect and vigilance towards the environment, even if this new attitude may seem to run counter to immediate interests. This applies to industry, which will have to adopt production methods guaranteed to safeguard the environment; to the Sunday gardener, who will have to limit his use of pesticides; and to the mechanic in his repair shop, who will have to systematically refuse to modify catalytic converters on our automobiles. All of these individuals will help decrease the spread of toxic substances into the environment.

The Department began by adopting strict rules for itself in order to assume unqualified leadership based on changing environmental forces and designed to promote efficient action.

Clarity

A leader commands respect if he knows where he is headed and if his intentions are known to others. In this context, the ministère de l'Environnement intends to introduce or propose policies by sector specifying measurable environmental objectives that will make it possible for all to gauge their success.

One of these policies will deal with the integrated management of domestic waste. The Department intends to develop a specific policy for every environment-related field of activity. The list of these areas is given in the chapter dealing with the Department's main sector-based objectives.

Within the Department itself, this quest for clarity finds expression in the definition of mandates at all management levels. These mandates will clearly outline target objectives.

Firmness

A firm stand concerning action to be taken is the corollary of clarity of intent. This is particularly true for legislation concerning the environment. The Department intends to step up its monitoring and inspection activities to ensure that regulations are respected and, consequently, that environmental conservation is ensured. Authorization certificates will also be monitored more rigorously.

The Department will set up a team of specialized investigators, familiar with the best techniques, to work with regular regional inspectors. Among other things, when faced with serious cases of pollution, these specialists will be able to prepare files containing evidence, thereby rendering legal proceedings more effective and systematic.

Selectivity

Some areas warrant greater attention than others depending on the seriousness of environmental problems. The basic criteria used to select action priorities are ***human health***, ***ecosystem health***, ***environmental quality***, and ***protection of property***.

These criteria provide a scale which makes it possible to evaluate the impact of various events and assess problems immediately. In terms of setting priorities, it seems reasonable to accord greater importance to problems directly affecting human health than to those related to ecosystem health. Similarly, the latter will take priority over problems affecting the quality of the environment and those related to property. While taking into account the financial constraints felt throughout the public sector, the ministère de l'Environnement will allocate its resources according to these priority criteria.

underlie

1 **to maintain ecosystem diversity, productivity and permanence;**

2 **to reduce the exposure of individuals, plant and animal species to toxic substances.**

If all concerned strive to attain these basic objectives in developing their policies and plans of action, it will become much easier to achieve the many sector-based objectives related to environmental concerns: quality drinking water supply, recovery of lakes and rivers, versatile soil utilization, preservation of atmospheric quality.

Defining target objectives is not enough: efforts must be increasingly centred on activities more likely to be beneficial to the environment. In this respect, the Department's various means of action, such as regulations, will be systematically analyzed to assess their relevance and genuine effectiveness.

Transparency

The Department must be familiar with the state of the environment, and inform the population of changes in it. It must also introduce a system of accounting for the common wealth of our natural heritage. Such a system will make it possible for all concerned to better understand the part they play in improving or destroying our environmental resources.

To this end, with the help of other government departments, it will soon publish its first progress report on the state of the environment in Québec. These progress reports will be published from time to time and will gradually become more specific as relevant environmental indicators are developed to measure the health of various living organisms and of our ecosystems. These reports will help us to better appraise the situation, evaluate problems more accurately, set priorities, apply appropriate solutions, monitor the implementation of various projects and assess their results.

While the population must be made aware of changes in environmental conditions, it is also essential that the ministère de l'Environnement give an account of its contribution to these changes. In this respect, the means used by the Department to date in making its activities known, such as its budget and annual report, are lacking and contain little information.

Its budget, which is divided into the major budgetary categories used within the government (programs, program elements, categories of expenditures, and so on), does not allow citizens to readily ascertain how it allocates its financial resources, or for which environmental problems or specific activities they are used.

Consequently, the Department is initiating a system of management by result. This type of management is centred on the attainment of regularly defined operational objectives, and on the achievement of concrete results where environmental issues are concerned.

The system of management by result will make it possible to publish two reports annually, clearly outlining how resources were used and showing concrete results in every field of environmental activity.

These fields of activity correspond to specific environmental themes. Acid rain, industrial wastes, and riverside habitats, for example. A complete list is provided further on.

Each year, the Department will prepare a budgetary statement showing the resources allocated to each field of environmental activity, and the

various means of intervention to be used for each (inspection, research, and policy development, for instance). At the end of each fiscal year, an appendix to the Department's annual report will indicate the quantity and quality of the results achieved. This information will also provide a means of coordinating the Department's activities. In many cases, more than one branch within the Department participates in the same type of activity.

Improving data concerning the environment will be based on logistic support, which has been rather limited within the Department so far.

A program for computerizing environmental data will be set up to sort out the data already available, and to keep developing this knowledge on a wide range of subjects, especially the state of the natural environment and sources of pollution. Such a computerized system will help document the actions taken and the decisions made. It will also allow the Department to make better use of the knowledge it possesses and to pass this knowledge on to the public.

The ministère de l'Environnement will not only ensure that this information is available. It will ensure that it is of the highest quality, particularly the environmental data supplied by the various participants. To this end, a general policy will be prepared on the accreditation of laboratories conducting environmental analyses.

An integrated approach

The problems of particular groups must be dealt with in an overall context in order to reduce the various sources of pollution, better define the changes in resource exploitation methods and fight pollutants. We have already discussed how environmental problems are interdependent. Plans of action for solving them must also be interrelated.

As a concrete measure, the Department will appoint a single resource person to deal with a target group (one type of industry in particular). This individual will channel the various reports specific to the sector and necessary for handling particular cases, making it easier to establish priorities for action in industry. This integrated approach will lead to more effective, economical techniques designed to reduce the pollutants released to a minimum.

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The guidelines adopted by the Department are expressed in guidelines and action strategies

GUIDELINES	*ACTION STRATEGIES*
1. Clarity	Developing sector-based policies with measurable environmental objectives
	Clearly identifying mandates at all Department management levels
2. Firmness	Paying more attention to environmental inspections
3. Selectivity	Systematically establishing priority activities and resources
	Evaluating legislation and other means of action
4. Transparency	Introducing management by result
	Computerizing and integrating data related to the environment
	Publishing progress reports on the state of the environment
5. Integrated approach	Implementing an integrated approach to the problems of each clientele
6. Involvement of participants in environmental issues	Improving the quantity and quality of information and increasing its availability
	Distributing scientific and technical data and developing environmental education and training programs
	Establishing central and regional means of consultation
7. Joint action	Promoting broader consultation on environmental orientation policies
	Entering into agreements with other government departments and agencies
	Cooperating with other governments and intergovernmental agencies

Environmental involvement

Many of those groups or individuals whose actions affect the environment are adopting clean technologies and changing their ways. These initiatives are significant for resource conservation. Such positive environmental protection measures deserve recognition and should be held up as models and examples to encourage more extensive, more concrete involvement by others.

The commitment of all concerned presupposes prior knowledge of the most effective means of action and environmental techniques. To ensure that this knowledge is available, scientific and technical data on the environment will be developed (directory of research personnel, dissemination of research results, data bank on clean technologies, and so forth).

While the ministère de l'Environnement intends to develop better information mechanisms designed to rally the population around environmental protection, it is also determined to step up its efforts for promoting environmental education and training.

In this context, the Department will provide technical support to environmental groups and educational networks already working to promote respect for the environment.

Efforts at practical education for people whose activity affects the environment will be centred mainly on the controlled use of pesticides, the sensible use of agricultural lands and manure management.

Existing mechanisms for dialogue at the central level will be used to promote environmental involvement. Periodic meetings will be set up with the sectoral associations representing the Department's main target groups. Here the regional branches will play a major role because they are in close contact with these problems and have to deal regularly with the individuals concerned. Periodic meetings will be held with community health departments, municipalities, environmental groups and associations representing the main target groups.

Joint action

While stressing means of clear expression and evaluation of environmental action, the Department wishes to instill greater commitment on the part of the public. Furthermore, the Department is seeking joint action to protect the environment.

In doing so, its main objective is to convince the individuals and groups involved, those who are responsible for environmental problems and those who defend environmental issues, to help identify and develop solutions to current problems.

Therefore, in preparing its sector-based policies, the Department anticipates holding vast public hearings, similar to those held on pesticide legislation and on environmental research and development policy.

Industries, manufacturing firms, municipalities or their associations, Québec government agencies, groups or organizations devoted to environmental protection, professional associations, research bodies, and consulting firms, as well as the popu-

lation as a whole, will be called upon to make their ideas known on various issues. Any comments or reactions to this document will be welcomed by the ministère de l'Environnement.

Together we must find solutions to a number of problems. One major facet of this solution-seeking process will consist in developing an integrated conservation and development program for the St. Lawrence, an outstanding natural resource of international significance. Another experiment in group solution-seeking will involve a new policy on domestic waste management.

The ministère de l'Environnement will also increasingly cooperate with governments of neighbouring provinces and states to accelerate the development of solutions to common problems.

Sustained cooperation from other departments

Within their respective mandates, other government departments can make significant contributions to the conservation, maintenance and improvement of the productivity of our natural resources. Some departments are directly involved in managing important natural resources. This is true for Energy and Resources for forests, and Recreation, Fish and Game for wildlife. Other departments, such as Agriculture, Fisheries and Food, provide personnel, advice and support to those involved in resource management.

Effective cooperation among government departments is based on mutual trust and recognition of respective mandates. It is important to clearly determine the roles of each in promoting conservation.

The ministère de l'Environnement is generally responsible for environmental protection. It must ensure ecosystem conservation and promote conditions which will ensure the lasting use of resources. As a rule, the Department must not claim exclusive control over conservation or the ecological approach. Nevertheless, it must provide leadership in changing attitudes and assessing environmental trends.

Two courses are open to the ministère de l'Environnement in its attempt to change attitudes. First, it must develop our knowledge of Québec's ecological systems, and continue to provide the other groups involved with expert advice on how to assess potential uses (much work has already been done in forestry). Secondly, it must identify overall guidelines for resource management in setting up policies and programs. Among these guidelines are: versatile use of resources, best possible utilization of such resources given their environmental potential, natural regeneration, recycling and recovery of secondary matter. Within this general context, the Department may cooperate with other departments in developing harvesting standards which will ensure a sustained yield in various resource sectors. To better meet this requirement, the Department recently set up an Ecological Consultation Service.

The Department must also keep a constant watch over the environment. It must detect and document deterioration, take stock of potential uses and places of major interest, and measure the impact of current practices. In this respect, it must cooperate in developing various indicators making it possible to monitor the environmental trends affecting the productivity of our various natural resources.

- use environmental resources sensibly
- respect the natural balance of the sites used or visited
- protect and respect nature

Business firms:

- adopt a code of environmental ethics
- set up environmental monitoring mechanisms
- use clean technologies

Farmers:

- adopt soil conservation methods
- stick to practices causing minimum harm to the environment

Municipalities:

- give land-use planning an environmental basis
- promote judicious use of resources (water particularly)

Researchers:

- continue developing environmental clean-up and contamination-prevention technology

Professionals:

- include environmental concerns in basic training programs
- promote environmental solutions when dealing with clients

Increased efforts

Because of their complexity and interdependence, the new problems confronting our environment represent a formidable challenge for society. With its international character and the type of reactions it requires, this challenge is comparable to the challenge confronting our national economy in a world of increased competition, where excellence is a must. Both calls must be answered simultaneously, and success must be achieved at both levels. Those countries with the best economic performance are not those with the least stringent environmental controls. On the contrary, given current problems and public opinion, businesses with the best environmental performances have the added advantage of becoming more competitive and more respected corporate citizens.

Particularly in the American Northeast, where the population is very environment-conscious, governments are taking definite stands and actions. Survival depends not only on state programs but on individual efforts as well.

The ministère de l'Environnement must stand behind worthwhile initiatives and promote positive environmental thinking. However, the Department cannot take the place of the individuals involved and act on their behalf. Its role consists in promoting initiatives, supporting and upgrading them, and making them known. The recent example of resource recovery and recycling is one to be followed. At the outset, the Department lent support to various local recovery and recycling experiments initiated by certain groups. To ensure definite results, new steps must be taken by those responsible for the management of domestic waste; they will have to take over. This is already being done in LaSalle and Ancienne-Lorette.

In addition, true dialogue must be established between the main actors involved. This dialogue will be constructive only if it is based on accurate information on the accomplishments of all concerned. The absence of dialogue, excessive emphasis on negative aspects and underestimating worthwhile initiatives, impedes concrete planning. Initiatives stressing information and dialogue are required. We have already discussed the necessity of a new social contract between the environment and development. The gradual working out and renewal of this social contract will be based on the active role played by various intermediary groups. They are the true links among the various segments of society, governments and the public. Local associations and federations of all kinds must be made even more aware of environmental realities, and promote among their members a true spirit of environmental competition.

It is not the Department's role to dictate the course others should take, over and above certain basic standard requirements, toward faster progress in resource conservation. By way of illustration, and to provide food for thought, here are some examples of possible contributions.

The public:

- choose biodegradable products or those which can be recycled
- sort garbage

The departments responsible for specific resources must, for their part, review their policies and programs and centre them around conservation. Practical steps have already been taken by some departments. Agriculture, Fisheries and Food has revised its farm drainage guide and is now studying various methods of improving soil conservation, particularly soil vulnerable to extensive erosion. Energy and Resources has revised its forestry management guide. Concerned with wildlife habitats, Recreation, Fish and Game has tabled amendments to the Act respecting the conservation and development of wildlife. Since the adoption of the Act respecting land use planning and development, Municipal Affairs has worked closely with the ministère de l'Environnement; now environmental concerns are taken into consideration when land-use management plans are set up in each regional territory. Transport Québec carries out regular studies on the impact of its road projects, and takes the necessary steps to reduce negative impacts.

These new guidelines take into account the proposals which can be implemented immediately, given the knowledge and attitudes of the various individuals involved. In the coming years, environmental progress resulting from these new guidelines will have to be assessed, and eventually amended in order to attain conservation objectives.

The interdepartmental approach lends a tangible form to conservation. It will find support in new administrative relationships between the departments concerned. The Department's Deputy Minister and Assistant Deputy Ministers have already initiated regular meetings with their colleagues from other departments; together they will review all programs of common interest. These meetings are designed to give practical meaning to overall conservation objectives in applying solutions to selected problems.

For the development of conservation strategies, all concerned depend heavily on new knowledge and on the development and testing of new measures. Better channelling and coordination of research and development activities is of prime importance. Within the framework of a new environmental research and development policy, monitored by the Department, other government departments will be able to upgrade their research programs and projects aimed at improving environmental conditions which are essential to the development of their sectors of activity. A forum will make it possible to discuss the contributions expected of these government agencies.

The Department and Health and Social Services signed a memorandum of agreement covering areas and issues of common interest. This close cooperation is of prime importance considering that health is a major priority-criterion in environmental action. Government commitments regarding the new guidelines will find their expression in other ways, such as:

- more systematic consideration of the environmental impact of policies and programs, particularly where priority sectors of environmental action may be affected;

- a closer link between the environmental impact study of projects and the screening of applications for subsidies made by industrial concerns.

This sustained cooperation is sure to have a ripple effect on other segments of society.

Teachers:

- instil positive thinking on environmental issues into the younger generations
- make known the many aspects of our dependence upon our environment

Environmental groups:

- promote or carry out demonstration projects
- make communities aware of local resources that are endangered or used improperly.

Initial objectives by sector

The new objectives proposed in this document will be reflected in policy changes affecting many fields of action emanating from the ministère de l'Environnement. In the coming years, each field of action will be the object of a policy review. The environmental objectives and the contributions expected from all concerned will be clearly defined and outlined.

To set specific objectives for each field of action now would run counter to the proposed approach. Nevertheless, to give a glimpse of new trends, the following table shows the more recent major achievements in each field of action, as well as the initiatives and principal changes anticipated for the future.

These fields of action correspond to specific environmental issues rather than to the Department's administrative structure. In many instances, more than one administrative unit is responsible for the results achieved. This is another means of illustrating that, through a policy of management by result, the Department employees are not restricted to internal tasks, but are involved in the environmental results to be achieved.

These fields of action as a whole make it possible for the ministère de l'Environnement to make progress in reaching the objectives and action priorities already discussed.

[redacted] of action	[redacted] objectives
1. Coordinated reduction and treatment of industrial waste • industrial effluents • atmospheric emissions • industrial waste	• Proposed industrial strategy aimed at: • multimedia integrated approach (water, air, soil) • compulsory treatment to protect the receiving environment • accelerated clean-up, particularly through: — legal action against recalcitrant offenders — support for research and the development of clean technologies
2. Controlled use of pesticides	• Promotion of the integrated control of harmful species • Supervised training of those selling and using industrial and commercial pesticides • Better information for users of domestic pesticides • Development of a research program
3. Restoration of hazardous waste sites	Gradual neutralization of sites in keeping with the current approach • Priority given to sites representing the greatest hazard to public health and natural ecosystems
4. Fight against acid and toxic rain	• Sustained research on its effect on waterways, forests and farmland Continued cooperation with other governments
5. Preservation of riverside habitats	• Implementation of the policy on shoreline and wetlands protection and floodplanning
6. Safeguarding our ecological heritage (endangered species and ecological reserves)	• Protection of sites representing specific ecosystems • Proposed legislation on the protection of endangered species • Quarterly programming of ecological reserves
7. Protection of the Northern environment	• Increased support for Northern committees • Development of specific environmental considerations

[redacted]	[redacted]
8. Encouraging sustainable utilization of resources	
• Soil conservation	• Encouraging, with the cooperation of other departments, good farming practices aimed at reducing widespread pollution
	• Making all individuals involved with the environment aware of this issue
• Manure management control	• Improved regulations and enforcement within the framework of an intensified strategy to change behaviour
• Protection of forest ecosystems	• Definition of the ecological framework allowing for versatile forest management
	• Participation in the development of changes in forest utilization
9. Control of drinking water and bathing water quality	
• drinking water	• Stricter enforcement of drinking-water regulations
	• Development of control techniques for new qualityparameters (micropollutants)
• bathing water	• Quality control of bathing water
10. Sewage treatment	• Continuing sewage-treatment program
	• Monitoring of water-treatment and sludge-elimination plant operations
	• Improved control of septic tanks
11. Enhanced value and elimination of domestic waste	• New policy on integrated waste management
	• Stricter control sites of sanitary landfill sites, particularly as regards leachates

[redacted] action	[redacted] objectives
12. Quality control of ambient air	• Helping other departments to develop sensitive parameter-control techniques (ozone or certain toxic agents, for example)
	• Increased awareness of the quality of ambient air in buildings (respect for nonsmokers, etc.)
13. Management of water resources	
• Control of water systems and of groundwater	• Establishment of financial penalties for deteriorating water quality
	• New rate schedules for water uses
	• Study of water diversion projects
• Hydraulic works management	• Transfer of works (or rate schedules for them) to local beneficiaries
	• Rebuilding of essential dams
• Flood damage prevention	• Carrying on with the official mapping of flood zones
	• Adaptation and better understanding of prevention policies
14. Emergency action	• Development of expert systems on various types of urgent situations
	• Better coordination with Protection civile du Québec
15. Management of the public water domain	• Better control over new trespassing, particularly through research on the riverside environment
	• Regularizing old cases of trespassing
16. Environmental assessment of major projects	• Improved approach to impact assessment of major projects, on the natural environment and the human habitat

[redacted] action	[redacted] objectives
17. Environmental planning council	
• support for land-use planning	• Mechanisms intended for local and regional groups and other agencies, including environmental concerns in land-use planning
• promotion of local policies	• Promotion and development of local policies concerning noise, snow waste, urban and transportation runoff designed to protect the quality of the environment and the quality of life.

[redacted]ment and its partners

Government agencies

The departments managing natural resources and governing their exploitation, and those which contribute to environmental awareness in Québec:

- ministère des Affaires municipales
- ministère de l'Agriculture, des Pêcheries et de l'Alimentation
- ministère de l'Éducation
- ministère de l'Énergie et des Ressources
- ministère de l'Industrie et du Commerce
- ministère du Loisir, de la Chasse et de la Pêche
- ministère des Transports
- ministère de la Santé et des Services sociaux

The various Canadian environment and resources departments:

- Canadian Council of Resource and Environment Ministers
- National Task Force on the Environment and the Economy
- the meeting of environment deputy ministers from the provincial, territorial and federal governments

The U.S. state governments associated with Québec in certain agreements, conferences or meetings:

- Annual conference of the New England Governors and the Eastern Canadian Premiers
- Great Lakes Water Resource commission
- Québec-New York Agreement on Acid Rain
- Québec-Wisconsin Agreement on Environmental Issues

Municipalities

There are more than ***1500 municipalities*** in Québec, some of which are members of the ***Union des municipalités du Québec***. Municipal activity includes many fields related to the environment: road transportation, public health (water supply, sewers, domestic waste management), health and welfare, town planning, land development and recreation.

Municipalities are grouped together in:

- ***joint municipal boards***, where two or more municipalities join together to jointly manage municipal services;
- ***urban and regional communities*** such as the Communauté urbaine de Montréal, the Communauté urbaine de Québec and the Communauté régionale de l'Outaouais, respectively grouping 29, 13 and 11 municipalities. Added to these is the Kativik Regional Government, which includes 14 municipalities; ►

- ***regional county municipalities*** are agencies responsible for land-use planning and regional services which cannot be provided by each municipality. They also administer territories which are not organized or established as municipalities. In Québec, the ***Union des municipalités régionales de comté*** includes 95 regional county municipalities.

The municipal sector also includes various groups such as the ***Association des inspecteurs municipaux de l'environnement***.

Business firms

Business firms or industrial plants carry on activities which are liable to alter the environment or emit pollutants into the air, water or soil. All of them utilize energy in various forms. In Québec, there are some 12 000 plants. They include:

- logging and mining operations;
- manufacturing plants processing raw materials or using secondary matter. Nearly ***3 000 industrial plants*** produce effluent or wastewater as a result of processing. This effluent contains organic, inorganic, bacterial, toxic, thermal, aesthetic and nutritional pollutants. The worst industrial polluters are the agribusiness, textile, pulp and paper, petroleum and petrochemical, chemical product, mining and metallurgy processing sectors. Industrial plants are a major source of air pollution and hazardous wastes;
- hydroelectric, thermal, nuclear and other power plants;
- transportation companies using fuel;
- service companies handling or using dangerous products or equipment containing hazardous substances. Among such substances are some types of oil, or equipment containing PCBs, paint or varnish solvents, ink, pesticides, and so on;

The ministère de l'Environnement works closely with:

- ***Comité des utilisateurs de BPC,***
- ***representatives from the wholesale and retail pesticide industry and trade, and those who use pesticides.***

Farmers

The agricultural sector is both a victim and a perpetrator of pollution. Improved farming practices and the development of new products and new techniques will make it possible to fight pollution caused by farming, or by activities affecting the farm environment;

- in the vegetable crop sector, chemical fertilizers, the use of pesticides, and surface drainage weaken the soil and jeopardize the equilibrium of watercourses;
- acid rain also affects farming; it causes the withering of hardwoods, particularly maples; ►

- in livestock production, involving some 32 000 farms, surplus manure and inadequate spreading as well as runoff into watercourses, cause serious harm to the environment.

Many groups and agencies are concerned with this sector:

- ***Union des producteurs agricoles (UPA)*** grouping a number of federations: maple sugar, hog, vegetable and dairy producers;

- ***Ordre des agronomes du Québec;***
- ***Association d'agriculteurs biologiques;***
- ***Agricultural technological institutes;***
- ***University faculties of agriculture.***

Environmental groups

There are some ***864*** environmental groups in Québec:

161 educational groups whose goal is to educate the public on environmental issues. Among them:

— Association des professeurs de science du Québec
— Association québécoise de la lutte contre les précipitations acides (AQLPA)
— Cercles des jeunes naturalistes
— Clubs 4-H du Québec inc.
— Enjeu et environnement jeunesse inc.
— Mouvement pour l'agriculture biologique au Québec inc.
— Société linéenne du Québec
— Société pour vaincre la pollution (S.V.P.)
— Stop
— Québec Sciences

193 conservation groups whose main objectives are the protection of a specific site (lake, river, forest, cultural and historic site) or of some element in the environment (wildlife, flora). Among them:

— À court d'eau
— Association des biologistes du Québec
— Association forestière québécoise inc.
— Association pour la préservation du lac Magog
— Fédération des associations pour la protection de l'environnement des lacs (FAPEL)
— Fédération des sociétés d'horticulture et d'écologie du Québec
— GreenPeace
— Sauvons Montréal
— Société québécoise pour la défense des animaux
— Union québécoise pour la conservation de la nature ►

- ***41 research groups*** whose primary objective is harmonious utilization of environmental resources. These groups develop expert techniques, conduct experiments and carry out hearings on specific environmental issues. Among them:

— Association québécoise des techniques de l'eau (AQTE)
— Conseil québécois de l'environnement
— Kahnawake Development Research Program
— Société d'études et de réflexion sur l'avenir (SERA)

- ***53 groups involved in recovery and recycling:***

— Centre de récupération Les Feuillus
— Coopérative «Récupère-Sag»
— Coopérative régionale des consommateurs
— Récupération Bois-Francs inc.
— Recyclage Québec jeunesse inc.
— Recyclolac inc.

173 para-environmental agencies with objectives indirectly related to the environment, or which include general environmental considerations in their activity. Among them:

— Cree Regional Authority — Grand Council of the Cree
— Association des entrepreneurs en services sanitaires du Québec inc.
— Association féminine d'éducation et d'action sociale (AFEAS)
— Associations touristiques régionales associées du Québec
— Conseils régionaux de la culture
— Some twenty community radio broadcasting stations.

- *72* ***science-recreation*** societies devoted to leisure time scientific activities related to the environment.
  Among them:

— amateur mycologist societies
— ornithologist clubs
— Conseil de développement du loisir scientifique, which includes six regional recreational councils
— Fédération québécoise du loisir scientifique
— Société d'animation du jardin et de l'institut botanique

- ***171 reception centres*** providing organized and educational activities related to the environment. Among them:

— Association des camps du Québec
— outdoor recreation centres
— Centre éducatif du ministère de l'Énergie et des Ressources, which includes a network of eight centres
— various forestry education centres
— Info-Nature

Scientists

The ministère de l'Environnement is counting on environmental research and development to better understand the nature of pollution, to prevent contamination of the environment or to decontaminate it, and to develop strategies designed to utilize or recycle waste and secondary matter. Some industries are already taking steps to reduce their effluents and develop clean technologies. They are adopting internal strategies designed to reduce the volume of pollutants at the source. In addition, many groups participate in the Department's work. Among them:

- ***researchers from various research centres and universities***
- ***consulting firms***
- ***professionals from various fields: health, engineering, forestry, agriculture, etc.***
- ***professional associations.***

The public

There are more than 6.5 million citizens in Québec who are increasingly concerned with the state of the environment.

Each year, the ministère de l'Environnement answers more than ***100 000 information requests***. It sends out nearly ***one million copies*** of various publications, technical reports, information folders and brochures, posters and maps.

Ministère de
l'Environnement